

1. My article *Canonical Forms of Selfadjoint Operators and Associated Stress-Energy Tensors* , is based a part of the publication of G. S. Hall; *Physical Structure of the Energy-Momentum Tensor in General Relativity* ( *Internat. Journal of Theor. Physics*; Vol.25 -4 1986) and other authors. This publication is from my point of view particularly interesting to better understand the nature of stress-energy tensor from their invariant elements . The development of my article is done from a rather simple in its mathematic context but in my view, with an important physical content. The simplicity of mathematical development does not imply lack of value or transcendence in its physical contents. In some places use words such as traditional eigenvalues or eigenvectors that are compatible with a terminology more mathematics as invariant subspaces etc... in the cases studied. I think that this nomenclature, that I have used, is more appropriate for non-specialist readers.
  
2. Some reflections more on *Canonical forms of selfadjoint operators and associated stress-energy tensors*  
By F. Sanchez

I think important to add something more to the literature on these issues in addition to the referred to in *Canonical Forms of selfadjoint operators and associated stress-energy*

*tensors*. Here are some articles and citations recommendable  
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Symmetries and Curvature Structure in General Relativity ;  
G.S. Hall ; World Scientific Lecture in Physics-Vol 46 ; 2004.  
Chapter 7 the classification of stress-energy tensors type 2,  
is dealing with great detail.

The Large Scale Structure of Spacetime ; S. Hawking : 4.3-  
Energy conditions; page 88; Cambridge University Press. Ex-  
poses briefly the classification of selfadjoint endomorphisms in  
lorentzian spaces.

In particular are interesting the following publications on selfadjoint endomorphisms classifications and associated stress-energy tensors.

M.J. Rebouças, J. Santos A.F.F. Teixeira.: Classification of Energy Momentum Tensors in  $n \geq 5$  Dimensional Spacetimes: a Review ; arXiv:gr-qc/0312064 ; 12 Dec 2003

M.J. Rebouças, J. Santos: A note on Segre Types of Second Order Symmetric Tensors in 5-D Brane-world Cosmology ; arXiv:gr-qc/0311068 ; 20 Nov 2003

J. Santos, M.J. Rebouças, y A.F.F. Teixeira.: Segre types of symmetric two-tensors in n-dimensional spacetimes ; arXiv:gr-qc/9507021 ; 11 Jul 1995

F.M. Paiva, M.J. Rebouças, A.F.F. Teixeira.: Limits of spacetimes in five dimensions and their relation to Segre Types ; arXiv:gr-qc/9606056 ; 18 Jun 1996

In these articles can find an extensive list of references.

With regard to lorentzian vector spaces , between the existing literature I emphasise:

General Relativity for Mathematics; R. K. Sachs ,H.Wu; Spring Verlag 1977; Chapter 1.

Has an advanced introduction of lorentzians vectorial spaces.

Linear Algebra; Werner Greub; Spring, Graduate Texts in Mathematics 1974; Chapter 9.

Is dealing with several questions about pseudoeuclidean spaces.

The Geometry of Minkowski Spacetime; G. L. Naber; Dover 2003; Chapter 1.

Is dealing with minkowskian space-times structure and some other questions (ortochronous transformations, etc...).

Advanced Linear Algebra; Steven Roman; Springer 2005. Chapter 11 is dealing with some new aspects of the bilinear forms on hyperbolic spaces.

Espacios vectoriales lorentzianos; J.L. López B. (forthcoming)

It is a comprehensive and thorough treaty of lorentzian vectorial spaces; especially interesting.